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STATEMENT OF
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U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
COMMITTEE ON COMMERCE
SUBCOMMITTEE ON COMMERCE, TRADE
AND HAZARDOUS MATERIALS
U.S. HOUSE OF REPRESENTATIVES

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Introduction:

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the cleanup of National Priorities List (NPL) sites under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund). I will briefly discuss how Superfund cleanup decisions are made and the reforms supported by this Administration to improve the cleanup process.

The Remedy Selection Process

The remedy selection process is probably the most challenging job the EPA must perform under the Superfund program. The Agency must first perform the careful assessment of the nature and extent of the contamination, as well as, the current and potential risks posed to human health and the environment. After assessing the risks posed by the site, EPA determines whether cleanup is warranted and, if so, develops and evaluates alternative cleanup approaches to manage the risk. Finally, EPA must make a decision as to the approach for a given



site, balancing the concerns of the community, state and local governments, expenditure of public funds, and the limits of science and technology to correct past contamination. This process is described in the National Oil and Hazardous Substances Contingency Plan published in the Federal Register on March 8, 1990.

To speed the pace of the remedial process the Agency developed the Superfund Accelerated Cleanup Model (SACM) in 1992. While removal authorities have always been used to address the immediate public health threats at NPL sites, under this approach removal authorities are initiated more quickly, often before the remedial investigation has begun, providing immediate risk reduction and providing a basis for remedial actions which will address long-term risks. To date, we have initiated 1255 removal actions at NPL sites.

EPA is also conducting expanded site assessments early in the remedial process. This leads to a more efficient detailed site characterization, the remedial investigation/feasibility study (RI/FS). At this stage EPA assesses, through the baseline risk assessment, what contaminants are present, the magnitude and extent of the contamination, the current and potential risks to the surrounding community, human health and the environment, and evaluates the effectiveness of various cleanup methods for that particular site. In the remedial investigations (RI) stage, an evaluation of past activities at the site leads to sampling and laboratory analyses to determine the contaminants of concern and the extent to which the soil, air, surface water and groundwater and perhaps people, fish, food, or fodder are contaminated. The remedial investigation is the point at which the baseline risk

assessment is conducted for each NPL site. As described in the National Contingency Plan (NCP), the baseline risk assessment should "characterize the current and potential threats to human health and the environment that may be posed by contaminants migrating to groundwater or surface water, releasing to air, leaching through soil, remaining in the soil and bioaccumulating in the food chain."

Prior to 1990, Superfund risk assessments relied heavily on the "worst case scenario." This is no longer the case. We now use guidance for risk assessments that employs site-specific information on contaminant concentrations, exposure pathways and land use. The EPA's Science Advisory Board has critically reviewed this guidance and found it to be sound. This guidance makes today's Superfund risk assessments more realistic than those conducted earlier in the program. In addition to calculating central tendency determinations required in several of the pending risk assessment bills, EPA's current risk assessment process also considers other factors in order to protect most individuals near Superfund sites. Relyance solely on the central tendency or average exposures to set cleanup levels may underestimate risk for up to half of all exposed individuals.

The human health portion of Superfund risk assessment is conducted as outlined in EPA's *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual Part A.* Land use is taken into account to determine exposure pathways, and combined with site specific data on chemical concentrations to estimate human health exposures at a site. These exposure estimates are then combined with chemical toxicity data available from EPA's

Office of Research and Development to estimate site-specific cancer and non-cancer risks. Volume II of the *Risk Assessment Guidance for Superfund, Environmental Evaluation Manual* provides guidance for conducting the environmental portion of the baseline risk assessment.

The baseline risk assessment also helps establish preliminary cleanup goals for the site that are protective of human health and the environment. If cleanup is required, EPA then conducts a feasibility study (FS) in which several cleanup proposals are developed to attain the preliminary cleanup goals and a no action alternative is reviewed. Each alternative is then evaluated against nine criteria. These nine criteria, as described in the NCP, are presented in three categories -- threshold, balancing, and modifying. The two threshold criteria are: first, protection of public health and the environment; and, second, compliance with applicable or relevant and appropriate requirements (ARARs) of other federal and state laws which has led to requirements for more stringent cleanups at many sites. There are five balancing criteria which are weighed or balanced against one another and include long-term effectiveness and permanence; reduction in toxicity, mobility or volume achieved through treatment; short-term effectiveness; implementability; and, cost. The final two criteria are modifying criteria -- state acceptance and community acceptance.

After evaluating the alternative cleanup approaches using these nine criteria, the Agency finally solicits public comment on a proposed plan. The proposed remedy must fulfill the statutory requirements to protect human health and the

environment, comply with ARARs (or invoke a waiver), be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Upon full consideration and response to all public comments, the Agency issues its cleanup decision in a Record of Decision (ROD). Where the preference to use treatment as a principle element has not been met, the reasons must be explained. EPA expects, and review of RODs to date shows, that we will treat at some sites, manage wastes at some sites, and at many sites we do both. EPA has signed over 1500 Records of Decision establishing the cleanup levels and technologies necessary to protect public health and the environment. All cleanup construction has been completed at 292 NPL sites and partial cleanups have been completed at an additional 489 sites.

Improvements to the Remedy Selection Process

Critics of the Superfund cleanup process have claimed that Superfund sites pose an insignificant human health risk, the cost of cleanup is too expensive, and the pace of cleanup is too slow.

As stated by Administrator Browner before this Subcommittee on March 16th and as you will hear from Dr. Barry Johnson from ATSDR, Superfund sites do pose significant risk to public health and the environment. Recent analysis of risk data from a sample of about 200 Superfund sites shows that risk levels at more than 80 percent of the sites exceeded either an individual cancer risk level of 1 in 10,000 or a noncancer hazard index value greater than 1. While potential future

risks are generally higher than current risks, this data shows that about one third of the sites have a current risk of at least 10^{-4} or a hazard index of 1. The methods of determining these risk levels are not worst case but reasonable estimates of those individuals that are likely to have the highest exposures. This information supports the need for action to protect the public from risks at Superfund sites.

One example of our efforts to improve the assessment of health and environmental hazards was to revise the Hazard Ranking System, which is used to help screen sites for inclusion on the NPL. The revised HRS places an emphasis on sites with actual exposure to humans and sensitive environments. Of the sites that have been proposed for addition to the National Priorities List (NPL) using the revised Hazard Ranking System (since 1991), 80 percent show that there is past or current exposure to either humans or sensitive environments. We believe that these changes help to better identify those sites posing the greatest risks to health and the environment.

As the Administration recently reported to you, this year the Agency has launched a series of administrative reforms to improve the Superfund program. Some of these reforms are designed to make the cleanup process, including remedy selection, more efficient. Many of the legislative reforms offered by the Administration last year also address these concerns. However, we urge Congress to make the changes in the law that the reauthorization stakeholders coalition and this subcommittee developed last year.

The Administration supports consideration of reasonably anticipated future land uses early in the Remedial Investigation/Feasibility Study (RI/FS) process and before cleanup decisions are made to help determine the appropriate level of cleanup. The Agency, as a matter of policy, considers future land use under the present remedy selection process. However, it supports a statutory requirement for early consideration of reasonably anticipated future land use to guide development of appropriate cleanup levels and remedy alternatives. Critical to this consideration, however, should be the early consultation and involvement of local communities, especially those residents living closest to the site.

The Administration supports clarifying the cleanup objectives for Superfund by requiring the establishment of national goals for the protection of human health and the environment. These goals would include a single numeric level for carcinogens, a single numeric level for non-carcinogens and a narrative goal for environmental risks. The purpose of the national goals was to promote consistent equivalent protection of human health and the environment from the risks posed by Superfund sites in terms that can be more clearly understood by the public. The goals would be considered at all sites and met, unless achievement would be technically infeasible or unreasonably costly.

We support the establishment of a national Superfund risk protocol to govern the development and use of risk assessments in the Superfund program. The protocol would have governed baseline risk assessments which determine whether cleanup is needed, and help develop cleanup levels, and the analysis of risks that

may be posed by implementation of a particular cleanup alternative. The National Risk Protocol would promote realistic estimates that neither minimize nor exaggerate the risks posed by a Superfund site. The risk protocol used in conjunction with the national goals was intended to create greater consistency and clarity in the ways risks are estimated and to provide greater understanding of how they are used to ensure protection.

We also sought reform of the remedy selection process through elimination of the mandate for permanent solutions, narrowing the preference for treatment to "hot spots" within a site, providing for greater consideration of cost in cleanup decision making, and eliminating the requirement to attain relevant and appropriate requirements of other laws. Based on last year's data, we estimated that these reforms would have resulted in cleanup costs savings of 19% to 25%, and saved private parties nearly \$400 million a year.

The elimination of the statutory mandate for permanent solutions should be replaced with a requirement to address long-term reliability. This would provide EPA with the impetus to select durable remedies, but enables the consideration of other factors such as community acceptance of the remedy, the reasonableness of its cost, and the availability of other treatment technologies. The current statutory preference for treatment should be limited to "hot spots". This would avoid costly treatment of large volumes of low level contamination and ensure that the most contaminated areas at sites and other areas where contamination could not be contained safely would receive treatment.

The appropriate remedy, under this new approach, would be determined on a site-specific basis by applying five remedy selection criteria. An appropriate remedy that is protective of human health and the environment would be determined by considering the remedy's effectiveness; its long-term reliability; the risk posed by the remedy to the community, cleanup workers, and the environment; the acceptability of the remedy to the affected community; and, the reasonableness of cost in relation to the other factors just mentioned.

This restructured criteria for remedy selection will streamline the decision making process, provide elevated consideration of cost, and increase the role of the local community. As a result, cost would be placed on an equal footing with effectiveness, community acceptance, long-term reliability and short-term implementation concerns. Under these reforms, both cost and community acceptance would have a greater role in remedy selection than they do under current law.

The Administration continues to support the goal of protecting the nation's valuable groundwater resources from contamination from Superfund sites. Currently, one out of two citizens get their drinking water from groundwater aquifers. The concerns expressed regarding groundwater restoration center on the difficulty in achieving cleanup and the cost of that cleanup. The reforms we support would have addressed these concerns.

When developing ground water remedies, cost would have been considered in several ways: First, cost is a factor in determining whether it is impracticable to

remediate; second, unreasonable cost is a reason to achieve a lesser level of cleanup where concentrations are low; and finally, reasonableness of cost is a specific factor to be considered in remedy selection.

While continuing to strive for restoration of contaminated groundwater to its beneficial use where technologically feasible, we have established policy and would support statutory revisions that consider the difficulties of achieving complete cleanup of contaminants such as Dense Non-Aqueous Phase Liquids (DNAPLs). In addition, the Administration supported, last year, consideration of the time frame in which groundwater would likely be used for drinking water development and designed the cleanup accordingly. This approach also acknowledged the use of containment and natural attenuation where appropriate.

We support the goal of returning contaminated ground waters to their beneficial use and avoid passing on a legacy of hazardous waste contamination to future generations. If we were to focus only on containment, we must also factor in the costs of maintaining these systems. Another consideration is a recognition that much of the hazardous waste contamination to ground water is unlikely to attenuate over time. We also want to continue to encourage development of innovative cleanup technologies to address this contamination. And, without restoration of ground water where it is technically feasible, we run the risk of seriously limiting economic development in the West and economic redevelopment of many communities across the U.S.

Finally, the statutory requirement that remedies attain "applicable or relevant and appropriate requirements" (ARARs) should be modified. The "relevant and appropriate" element in the requirement should be eliminated and only those standards directly applicable to cleanups should be used at sites. At present, ARARs are often found to increase the cost of cleanup, create additional delay and require compliance with laws that have little to do with the level of cleanup required. Thus, this reform would result in the elimination of the many additional conditions on Superfund remedies presently imposed that drive up the cost of cleanup.

Other Issues

Many of the same concerns with the cost and speed of Superfund cleanup that led to the Superfund Reform Act are being addressed by Congress in unrelated legislation that may lead to undesirable consequences. Specifically, H.R. 1022, the "Risk Assessment and Cost-Benefit Act of 1995," requires the selection of the least-cost remedy for cleanup actions based on an incremental cost benefit test. While it is important to elevate the role of cost in remedy selection, under the provisions of H.R. 1022, incremental cost-benefit analysis becomes the primary remedy selection criterion, potentially superseding other remedy selection criteria including the protection of human health or the environment, or the preferences of affected citizens. This bill appears to preempt state requirements, even those directly applicable to cleanup of hazardous waste sites, unless they meet the

incremental cost-benefit standard. As a result, effective remedies which protect human health and the environment and are acceptable to the community could be rejected in favor of remedies that leave significant portions of the population unprotected, that are unacceptable to communities adjacent to Superfund sites, that allow the spread of contaminated ground water, and that leave contaminated sites as a blight on communities for the future.

We are also aware that the Committee is interested in making sure that radioactively contaminated sites are addressed appropriately by the Agency. I would like to assure you that the Office of Solid Waste and Emergency Response is working closely with the Office of Radiation and Indoor Air to develop an overall regulatory approach to address the risk to people and the environment from these sites.

Finally, EPA recently received a March 30 request from this Committee on lead issues. You have our responses to these questions. However, I would like to take this opportunity to highlight a few key points.

EPA's approach to addressing soil lead contamination at Superfund sites is described in an OSWER Directive issued on July 14, 1994 (Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities). This Directive promotes the use of better science as well as increased consistency in EPA's assessment and management of lead risks. It recommends a risk-based screening level of 400 ppm for lead in soil for residential land use, describes how to develop site-specific preliminary remediation goals or media cleanup standards at

Superfund and RCRA sites, and describes a plan for soil lead cleanup at Superfund and RCRA sites that have multiple sources of lead. It recommends the use of the Integrated Exposure Uptake Biokinetic (IEUBK) Model to evaluate potential risks to children from environmental exposures to lead at hazardous waste sites in residential settings.

The IEUBK model is designed to consider site-specific information in estimating the overall exposure of children to various environmental sources of lead. By identifying the range and magnitude of lead sources at a given site, risk managers are better able to determine which source or exposure control actions might address the greatest lead risks. The model was developed in a cross-Agency effort to build the best available information on the effects of lead in humans into a state-of-the-art risk assessment tool. The EPA's Science Advisory Board in an early review of this tool stated that the model "represents an important advance in assessing biologic response to and potential health risks from environmental contaminants" and encouraged the Agency to consider development of similar tools for other contaminants. As a result of comment by the Science Advisory Board and others, EPA is working to validate the IEUBK model and to have the results peer reviewed.

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Some have argued that the Agency should base its decisions about the need for cleanup on blood lead data. The Directive recommends the use of all available data, including blood lead data, in assessing lead-related risks. However, the Science Advisory Board cautions that blood lead data must be evaluated carefully.

Among other factors, for example, small sample size and seasonal or other temporary variations in the behavior of children can affect measured blood leads in site residents. By the time lead shows up in blood analysis, harm to children may have already occurred. We support the Science Advisory Board recommendation that blood lead levels should NOT be used alone to estimate site risks.

Some critics have argued that mining site soils represent a lesser threat than soils from other types of sites because of their low "bioavailability." This "bioavailability" can depend both on soil particle size and the solubility of the lead species present. The Agency agrees that soil lead bioavailability is an important consideration in evaluating lead risks. However, most sites are not easily divided into groups of high or low bioavailability. For example, many mining sites have experienced other types of milling or smelting activities that could greatly influence the soil types and thus the bioavailability of soil or housedust in a community. However, in some cases, site-specific bioavailability studies may be desirable, if for example potential cleanup costs are estimated to be large.

Your recent request of EPA for information on lead issues also implies a concern that EPA has not been forthcoming in sharing the results of the "Three City Lead Study," a group of three studies conducted to evaluate the impact of soil lead abatement on blood lead levels in children in urban environments. In fact, the results of this study have been discussed in several peer review meetings that were open to the public and in final reports that are available to the public. Reports of the individual cities underwent expert peer review, and the results of the three

cities combined were discussed in a draft EPA Integrated Report that was peer reviewed in a public workshop in August, 1993. In response to additional requests for analyses by peer reviewers, the Agency's Office of Research and Development (ORD) is currently conducting further analyses which it expects to complete in August, 1995. The final report will be published after completion of the peer review process. We are working to condense the schedule as much as possible while including the necessary peer review steps. If the peer review results in no additional need for analyses, the report will be released in final form in January, 1996. At about the same time, the Agency plans to release the broader database associated with the study so that others can conduct their own analyses.

Preliminary findings indicate that: (a) interrupting the pathways by which children are exposed to lead-laden dusts reduces blood lead levels; (b) abatement of soil in areas of initially high soil lead levels does, in fact, reduce blood lead levels; and (c) abatement of soil lead where levels were initially near the OSWER soil screening level may have little impact on blood lead levels.

Conclusion

In conclusion, Mr. Chairman, reforms to the remedy selection process, as I have just outlined, would greatly enhance Superfund cleanups at significant cost savings to both the public and the private sectors. These reforms were supported by a broad range of stakeholders last year and represent a substantial restructuring of the Superfund cleanup process. We are eager to work with this committee to

craft legislative solutions to many of the flaws we have identified within the statute itself. The development of national goals and the establishment of a national risk protocol, the elimination of costly provisions for permanent solutions and requirements for compliance with non-cleanup related provisions of other laws, and efforts to reduce costs in the program while increasing the opportunity for community involvement suggest ways to provide the American people with a Superfund program that is efficient and that effectively protects our nation's health and the environment.

Thank you for the opportunity to address this Subcommittee. I will be pleased to answer any questions that you might have.